



[4910-13-P]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2016-9068; Directorate Identifier 2016-NM-067-AD]

RIN 2120-AA64

Airworthiness Directives; The Boeing Company Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: We propose to adopt a new airworthiness directive (AD) for certain The Boeing Company Model 737-300, -400, and -500 series airplanes. This proposed AD was prompted by reports of cracks in horizontal stabilizer lower skins. This proposed AD would require repetitive inspections for cracking of the horizontal stabilizer lower skin, and corrective actions if necessary. This proposed AD also provides actions that would terminate certain repetitive inspections. We are proposing this AD to detect and correct cracks in horizontal stabilizer lower skins resulting in reduced local stiffness of the horizontal stabilizer, which can cause heavy vibration leading to loss of structural integrity of the horizontal stabilizer.

DATES: We must receive comments on this proposed AD by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

- Federal eRulemaking Portal: Go to <http://www.regulations.gov>. Follow the instructions for submitting comments.
- Fax: 202-493-2251.

- Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590.

- Hand Delivery: Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For service information identified in this NPRM, contact Boeing Commercial Airplanes, Attention: Data & Services Management, P. O. Box 3707, MC 2H-65, Seattle, WA 98124-2207; telephone 206-544-5000, extension 1; fax 206-766-5680; Internet <https://www.myboeingfleet.com>. You may view this referenced service information at the FAA, Transport Airplane Directorate, 1601 Lind Avenue SW., Renton, WA. For information on the availability of this material at the FAA, call 425-227-1221. It is also available on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2016-9068.

Examining the AD Docket

You may examine the AD docket on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2016-9068; or in person at the Docket Management Facility between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this proposed AD, the regulatory evaluation, any comments received, and other information. The street address for the Docket Office (phone: 800-647-5527) is in the ADDRESSES section. Comments will be available in the AD docket shortly after receipt.

FOR FURTHER INFORMATION CONTACT: Gaetano Settineri, Aerospace Engineer, Airframe Branch, ANM-120S, FAA, Seattle Aircraft Certification Office (ACO), 1601 Lind Avenue SW., Renton, WA 98057-3356; phone: 425-917-6577; fax: 425-917-6590; email: gaetano.settineri@faa.gov.

SUPPLEMENTARY INFORMATION:

Comments Invited

We invite you to send any written relevant data, views, or arguments about this proposal. Send your comments to an address listed under the ADDRESSES section. Include “Docket No. FAA-2016-9068; Directorate Identifier 2016-NM-067-AD” at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of this proposed AD. We will consider all comments received by the closing date and may amend this proposed AD because of those comments.

We will post all comments we receive, without change, to <http://www.regulations.gov>, including any personal information you provide. We will also post a report summarizing each substantive verbal contact we receive about this proposed AD.

Discussion

We have received reports of approximately 90 cracks in horizontal stabilizer lower skins with most of them occurring between stabilizer station (SSTA) 111.10 and 166.30. Ten operators reported cracks on 18 airplanes outside this range with 14 of them inboard of SSTA 111.10. The cracks range in length from 0.25 inch to 3.75 inches, and the airplanes had between 12,670 and 69,569 total flight cycles.

The cracks started on the outer surface of the horizontal stabilizer lower skin where the chem-milled edge aligns with the edge of the lower flange of the rear spar. The cracks grew parallel to the rear spar. High secondary bending stresses due to compression buckling of the skins and sonic fatigue can cause the cracks to grow. Cracks have also started from the fastener line nearest the chem-milled step.

This horizontal stabilizer lower skin cracking, if not corrected, could result in reduced local stiffness of the horizontal stabilizer, which can cause heavy vibration leading to loss of structural integrity of the horizontal stabilizer.

Related Service Information under 1 CFR part 51

We reviewed Boeing Special Attention Service Bulletin 737-55-1059, Revision 1, dated April 6, 2016 (“SASB 737-55-1059 R1”). The service information describes procedures for doing inspections of the horizontal stabilizer lower skin, and repairs. The service information also describes procedures for doing actions that would terminate certain repetitive inspections. This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the ADDRESSES section.

FAA’s Determination

We are proposing this AD because we evaluated all the relevant information and determined the unsafe condition described previously is likely to exist or develop in other products of these same type designs.

Proposed AD Requirements

This proposed AD would require accomplishing the actions specified in the service information described previously, except as discussed under “Differences Between this Proposed AD and the Service Information. For information on the procedures and compliance times, see this service information at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2016-9068.

The phrase “related investigative actions” is used in this proposed AD. Related investigative actions are follow-on actions that (1) are related to the primary action, and (2) further investigate the nature of any condition found. Related investigative actions in an AD could include, for example, inspections.

The phrase “corrective actions” is used in this proposed AD. Corrective actions correct or address any condition found. Corrective actions in an AD could include, for example, repairs.

Differences Between this Proposed AD and the Service Information

SASB 737-55-1059 R1, specifies to contact the manufacturer for certain instructions, but this proposed AD would require accomplishment of repair methods, modification deviations, and alteration deviations in one of the following ways:

- In accordance with a method that we approve; or
- Using data that meet the certification basis of the airplane, and that have been approved by the Boeing Commercial Airplanes Organization Designation Authorization (ODA) whom we have authorized to make those findings.

Costs of Compliance

We estimate that this proposed AD affects 270 airplanes of U.S. registry.

We estimate the following costs to comply with this proposed AD:

Estimated costs

Action	Labor cost	Parts cost	Cost per product	Cost on U.S. operators
Inspection	4 work-hours X \$85 per hour = \$340 per inspection cycle	\$0	\$340 per inspection cycle	\$91,800 per inspection cycle

Estimated costs for optional actions

Action	Labor cost	Parts cost	Cost per product
Modification	Up to 51 work-hours per stabilizer X \$85 per hour = \$4,335	\$721	Up to \$5,056 per stabilizer

We estimate the following costs to do any necessary repairs that would be required based on the results of the proposed inspection. We have no way of determining the number of aircraft that might need these repairs:

On-condition costs

Action	Labor cost	Parts cost	Cost per product
Skin slice repair	Up to 438 work-hours X \$85 per hour = \$37,230	\$0	Up to \$37,230
External doubler repair	26 work-hours X \$85 per hour = \$2,210	\$0	\$2,210

Authority for this Rulemaking

Title 49 of the United States Code specifies the FAA’s authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs, describes in more detail the scope of the Agency’s authority.

We are issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: “General requirements.” Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

Regulatory Findings

We determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would not have a substantial direct effect on the States, on the relationship between the national Government and the States,

or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify this proposed regulation:

- (1) Is not a “significant regulatory action” under Executive Order 12866,
- (2) Is not a “significant rule” under the DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979),
- (3) Will not affect intrastate aviation in Alaska, and
- (4) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

The Proposed Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 14 CFR part 39 as follows:

PART 39 - AIRWORTHINESS DIRECTIVES

- 1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

- 2. The FAA amends § 39.13 by adding the following new airworthiness directive (AD):

The Boeing Company: Docket No. FAA-2016-9068; Directorate Identifier 2016-NM-067-AD.

(a) Comments Due Date

We must receive comments by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

(b) Affected ADs

None.

(c) Applicability

This AD applies to The Boeing Company Model 737-300, -400, and -500 series airplanes, certificated in any category, as identified in Boeing Special Attention Service Bulletin 737-55-1059, Revision 1, dated April 6, 2016 (“SASB 737-55-1059 R1”).

(d) Subject

Air Transport Association (ATA) of America Code 55; Horizontal stabilizer.

(e) Unsafe Condition

This AD was prompted by reports of cracks in horizontal stabilizer lower skins. We are issuing this AD to detect and correct cracks in horizontal stabilizer lower skins resulting in reduced local stiffness of the stabilizer, which can cause heavy vibration leading to loss of structural integrity of the horizontal stabilizer.

(f) Compliance

Comply with this AD within the compliance times specified, unless already done.

(g) Inspections, Related Investigative Actions, and Corrective Actions for Group 1, Configuration 1 Airplanes

For Group 1, Configuration 1 airplanes, as identified in SASB 737-55-1059 R1: Except as specified in paragraph (i)(1) of this AD, at the applicable time specified in paragraph 1.E., “Compliance,” of SASB 737-55-1059 R1, do a detailed inspection for cracking of the horizontal stabilizer lower skin; and do all applicable related investigative and corrective actions; in accordance with the Accomplishment Instructions of SASB 737-55-1059 R1, except as specified in paragraph (i)(2) of this AD. Do all applicable related investigative and corrective actions before further flight. Repeat the inspection of the horizontal stabilizer lower skin, if applicable, thereafter at the applicable intervals specified in paragraph 1.E., “Compliance,” of SASB 737-55-1059 R1. Options specified

in SASB 737-55-1059 R1, for accomplishing the inspections are acceptable for the corresponding requirements of this paragraph provided that the inspections are done at the applicable times in paragraph 1.E., “Compliance,” of the SASB 737-55-1059 R1.

(h) Inspections, Related Investigative Actions, and Corrective Actions for Group 1, Configuration 2 Airplanes

For Group 1, Configuration 2 airplanes, as identified in SASB 737-55-1059 R1: Except as specified in paragraph (i)(1) of this AD, at the applicable time specified in paragraph 1.E., “Compliance,” of SASB 737-55-1059 R1, do the actions specified in paragraphs (h)(1), (h)(2), and (h)(3) of this AD; and do all applicable related investigative and corrective actions; in accordance with the Accomplishment Instructions of SASB 737-55-1059 R1, except as specified in paragraph (i)(2) of this AD. Do all applicable related investigative and corrective actions before further flight. Repeat the inspections specified in paragraphs (h)(1), (h)(2), and (h)(3) of this AD, if applicable, thereafter at the applicable intervals specified in paragraph 1.E., “Compliance,” of SASB 737-55-1059 R1. Options specified in SASB 737-55-1059 R1, for accomplishing the inspections are acceptable for the corresponding requirements of this paragraph provided that the inspections are done at the applicable times in paragraph 1.E., “Compliance,” of SASB 737-55-1059 R1.

(1) Do a high frequency eddy current inspection for cracking of the skin around any repair done as specified in the structural repair manual or any external doubler repair, and a detailed inspection for any loose or any missing fastener of repaired doublers.

(2) Do a detailed inspection for cracking of the inspar lower skin of the horizontal stabilizer in unrepaired areas.

(3) Do a low frequency eddy current inspection for cracking of the forward fastener row of any external doubler repair.

(i) Service Information Exceptions

(1) Where SASB 737-55-1059 R1, specifies a compliance time “after the Revision 1 date of this service bulletin,” this AD requires compliance within the specified compliance time after the effective date of this AD.

(2) If any cracking, corrosion, hole elongation, or loose or missing fastener is found during any inspection required by this AD, and SASB 737-55-1059 R1, specifies to contact Boeing for repair instructions: Before further flight, repair the cracking, corrosion, hole elongation, loose or missing fasteners using a method approved in accordance with the procedures specified in paragraph (j) of this AD.

(j) Alternative Methods of Compliance (AMOCs)

(1) The Manager, Seattle Aircraft Certification Office, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the ACO, send it to the attention of the person identified in paragraph (k)(1) of this AD. Information may be emailed to: 9-ANM-Seattle-ACO-AMOC-Requests@faa.gov.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

(3) An AMOC that provides an acceptable level of safety may be used for any repair, modification, or alteration required by this AD if it is approved by the Boeing Commercial Airplanes Organization Designation Authorization (ODA) that has been authorized by the Manager, Seattle ACO, to make those findings. To be approved, the repair method, modification deviation, or alteration deviation must meet the certification basis of the airplane, and the approval must specifically refer to this AD.

(k) Related Information

(1) For more information about this AD, contact Gaetano Settineri, Aerospace Engineer, Airframe Branch, ANM-120S, FAA, Seattle ACO, 1601 Lind Avenue SW., Renton, WA 98057-3356; phone: 425-917-6577; fax: 425-917-6590; email: gaetano.settineri@faa.gov.

(2) For service information identified in this AD, contact Boeing Commercial Airplanes, Attention: Data & Services Management, P. O. Box 3707, MC 2H-65, Seattle, WA 98124-2207; telephone 206-544-5000, extension 1; fax 206-766-5680; Internet <https://www.myboeingfleet.com>. You may view this referenced service information at the FAA, Transport Airplane Directorate, 1601 Lind Avenue SW., Renton, WA. For information on the availability of this material at the FAA, call 425-227-1221.

Issued in Renton, Washington, on August 24, 2016.

John P. Piccola, Jr.,
Acting Manager,
Transport Airplane Directorate,
Aircraft Certification Service.

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